SANTA CRUZ BIOTECHNOLOGY, INC.

EAAT2 (85-N): sc-130403

BACKGROUND

Excitatory amino acid transporter 1 (EAAT1) is one of the two glial glutamate transporters that clear the extracellular glutamate generated during neuronal signal transmission. Excitatory amino acid transporters (EAATs) are membrane-bound proteins that are localized in glial cells and pre-synaptic glutamatergic nerve endings. EAATs transport the excitatory neurotransmitters L-glutamate and D-aspartate, a process that is essential for terminating the postsynaptic action of glutamate. The re-uptake of amino acid neurotransmitters by EAAT proteins has been shown to protect neurons from excitotoxicity, which is caused by the accumulation of amino acid neurotransmitters. Three glutamate transporters have been identified in human brain, designated EAAT1-3. EAAT1 and EAAT3 are also expressed in various non-nervous tissues, while EAAT2 expression appears to be restricted to the brain. Surface expression of the glial glutamate transporter EAAT1 is stimulated by Insulin-like growth factor 1 through activation of phosphatidylinositol-3-kinase.

REFERENCES

1. Arriza, J.L., Fairman, W.A., Wadiche, J.I., Murdoch, G.H., Kavanaugh, M.P. and Amara, S.G. 1994. Functional comparisons of three glutamate transporter subtypes cloned from human motor cortex. J. Neurosci. 14: 5559-5569.
2. Kirschner, M.A., Copeland, N.G., Gilbert, D.J., Jenkins, N.A. and Amara, S.G. 1994. Mouse excitatory amino acid transporter EAAT2: isolation, characterization, and proximity to neuroexcitability loci on mouse chromosome 2. Genomics 24: 218-224.
3. Ikeda, J., Terakawa, S., Murota, S., Morita, I. and Hirakawa, K. 1996. Nuclear disintegration as a leading step of glutamate excitotoxicity in brain neurons. J. Neurosci. Res. 43: 613-622.
4. Stoffel, W., Sasse, J., Duker, M., Muller, R., Hofmann, K., Fink, T. and Lichter, P. 1996. Human high affinity, Na^+-dependent L-glutamate/L-aspartate transporter GLAST-1 (EAAT1): gene structure and localization to chromosome 5p11- p12. FEBS Lett. 386: 189-193.
5. Sutherland, M.L., Delaney, T.A. and Noebels, J.L. 1996. Glutamate transporter mRNA expression in proliferative zones of the developing and adult murine CNS. J. Neurosci. 16: 2191-2207.
6. Rauen, T., Taylor, W.R., Kuhlbrodt, K. and Wiessner, M. 1998. High-affinity glutamate transporters in the rat retina: a major role of the glial glutamate transporter GLAST-1 in transmitter clearance. Cell Tissue Res. 291: 19-31.

CHROMOSOMAL LOCATION

Genetic locus: SLC1A2 (human) mapping to 11p13.

SOURCE

EAAT2 (85-N) is a mouse monoclonal antibody raised against recombinant EAAT2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

EAAT2 (85-N) is recommended for detection of EAAT2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

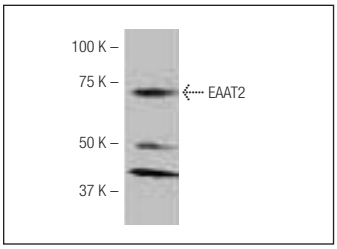
Suitable for use as control antibody for EAAT2 siRNA (h): sc-35255, EAAT2 shRNA Plasmid (h): sc-35255-SH and EAAT2 shRNA (h) Lentiviral Particles: sc-35255-V.

Molecular Weight of EAAT2: 70 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



EAAT2 (85-N): sc-130403. Western blot analysis of EAAT2 expression in HeLa whole cell lysate.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.